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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,742	06/24/2005	Shinichi Kawabata	388-051896	2393

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EXAMINER

UNDERWOOD, JARREAS C

ART UNIT	PAPER NUMBER
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2877

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/540,742

Applicant(s)

KAWABATA ET AL.

Examiner

Jarreas C. Underwood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-13 is/are allowed.
- 6) ☒ Claim(s) 1-4, 14 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/28/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informality: Phrases in the preamble such as "for emitting" and "for transporting" are taken to express intended use and are not given patentable weight. As such, claim 1 may be read as "A quality evaluation apparatus comprising a light emitting section, a light receiving section, a transporting device and a control device, wherein...". Examiner suggests using the word "which" to indicate a positive recitation.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-4 are rejected under 35 U.S.C. 102(b) as being anticipated Conway et al (United States Patent 3,930,994).

2. As to claim 1, Conway teaches a quality evaluation apparatus for fruits and vegetables comprising

a light emitting section (Figure 1, element 12) for emitting light to fruits or vegetables acting as one or more measured objects placed in a position for measurement,

a light receiving section (Figure 1, element 14) for receiving transmitted light or reflected light from the measured object at a photo-detective sensor of charge storage type to obtain photo-detective information for quality evaluation,

a transporting device (Figure 1, element C) for transporting the measured object via the position for measurement, and

a control device (Figure 5) for obtaining inner quality information of the measured object based on the photo-detective information from the light receiving section and for controlling operation of the respective sections,

wherein the control device repeatedly executes a charge storage discharge process for allowing the photo-detective sensor to store charges until a predetermined charge storage time elapses from start of charge storage and then releasing the charges stored in the photo-detective sensor until lapse of a predetermined discharge time when the measured object is not present in the position for measurement or when the photo-detective information for quality evaluation has already been obtained even if the measured object is present in the position for measurement, and wherein the control device allows the photo-detective sensor to release the charges stored therein until the predetermined discharge time elapses when the measured object transported by the transporting device reaches the position for measurement, and then executes a measurement charge storage process for storing charges in the photo-detective sensor to be used as the photo-detective information for quality evaluation until lapse of a predetermined measurement time (column 8, line 48 – column 9, line 4).

It is the examiner's position that the capacitor (column 8, lines 65-66) and subsequent charge integration performs the same function as a "charge storage discharge process".

3. As to claim 3, Conway discloses everything claimed, as applied above in claim 1, in addition the transporting device transports the measured object as placed in particular positions on saucers (Figure 1, element 17), and wherein the control device includes a saucer detecting device for detecting that a forward end in a transporting direction of a saucer has reached a predetermined position, thereby to determine that the measured object has reached the position for measurement based on detection information from the saucer detecting device (column 6, lines 44-66).
4. As to claim 4, Conway discloses everything claimed, as applied above in claim 1, in addition an object detecting member (Figure 1, element 37) for detecting that a forward end in a transporting direction of the measured object transported by the transporting device has reached a position upstream of the position for measurement in the transporting direction, and a transporting distance measuring device (Figure 1, element 38, and column 6, lines 32-66) for measuring a transporting distance of the measured object transported by the transporting device, and wherein the control device determines that the measured object has reached the position for measurement based on detection information from the transporting distance measuring device after detecting that the forward end of the measured object has reached the upstream position based on detection information from the object detecting device.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conway as applied to claim 1 above, and further in view of Hashimoto et al (United States Patent 6,754,600).

5. As to claim 2, Conway discloses everything claimed, as applied above in claim 1, with the exception of an incidence switching device switchable between an open state for allowing the transmitted light or reflected light from the measured object to be received at the photo-detective sensor, and a closed state for preventing the light from being received at the photo-detective sensor, wherein the control device controls operation of the incidence switching device to switch from the closed state to the open state when the measured object reaches the position for measurement, and to reinstate the closed state after the open state is maintained until lapse of the predetermined measurement time. However to do so is well known as taught by Hashimoto. Hashimoto teaches an incidence switching device (Figure 6, element 10) switchable between an open state for allowing the transmitted light or reflected light from the measured object to be received at the photo-detective sensor, and a closed state for preventing the light from being received at the photo-detective sensor, wherein the control device controls operation of the incidence switching device to switch from the

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closed state to the open state when the measured object reaches the position for measurement, and to reinstate the closed state after the open state is maintained until lapse of the predetermined measurement time. It would have been obvious to one of ordinary skill in the art at the time of invention to include an incidence switching device switchable between an open state for allowing the transmitted light or reflected light from the measured object to be received at the photo-detective sensor, and a closed state for preventing the light from being received at the photo-detective sensor, wherein the control device controls operation of the incidence switching device to switch from the closed state to the open state when the measured object reaches the position for measurement, and to reinstate the closed state after the open state is maintained until lapse of the predetermined measurement time, in order to avoid partial measurements while the object is in motion.

6. As to claim 14, Conway in view of Hashimoto discloses everything claimed, as applied above in claim 2, in addition Conway teaches the transporting device transports the measured object as placed in particular positions on saucers (Figure 1, element 17), and wherein the control device includes a saucer detecting device (Figure 1, elements 37, 38) for detecting that a forward end in a transporting direction of a saucer has reached a predetermined position, thereby to determine that the measured object has reached the position for measurement based on detection information from the saucer detecting device.

7. As to claim 15, Conway in view of Hashimoto discloses everything claimed, as applied above in claim 2, in addition Conway teaches the control device includes an

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object detecting member (Figure 12, elements 27, 28) for detecting that a forward end in a transporting direction of the measured object transported by the transporting device has reached a position upstream of the position for measurement in the transporting direction, and a transporting distance measuring device for measuring a transporting distance of the measured object transported by the transporting device, and wherein the control device determines that the measured object has reached the position for measurement based on detection information from the transporting distance measuring device after detecting that the forward end of the measured object has reached the upstream position based on detection information from the object detecting device (column 6, lines 44-67).

Allowable Subject Matter

Claims 5-13 are allowed.

The following is an examiner's statement of reasons for allowance:

8. As to claim 15, the prior art of record, taken alone or in combination, fails to disclose or render obvious a quality evaluation apparatus wherein the calibration formula is established by using the photo-detective information with a resolution greater than a maximum resolution of the photo-detective information determined by the number of the plurality of unit photodetectors; and wherein the computing section executes the wavelength calibration process by using the photo-detective information with a resolution smaller than the resolution with which the calibration formula is established.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jarreas C. Underwood whose telephone number is (575) 272-1536. The examiner can normally be reached on Monday-Friday 0600-1430.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley can be reached on (571) 272-2059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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J.U.
Jarreas Underwood
Patent Examiner
Art Unit 2877
3/1/2007

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[Signature]
Gregory D. Tooley, Jr.
Supervisory Patent Examiner
5/1/07